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Images

A fingerprint hidden inside the eye. A unique pattern of outer retina splitting as seen on en-face OCT and OCT-angiography

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ABSTRACT

A splitting of the outer plexiform retinal layer in a saw-like hyporeflective pattern in addition to partially formed concentric circles centred at the foveola were observed using en-face OCT and OCT-angiography in a 27-year-old female patient with rhegmatogenous retinal detachment and a 50-year-old female patient with Vogt-Koyanagi-Harada chorioretinopathy.

1. Case report

A 27-year-old female patient with rhegmatogenous retinal detachment and a history of ocular toxoplasmosis underwent pars plana vitrectomy with argon laser photocoagulation and silicone oil tamponade. En-face Optical Coherence Tomography (OCT) performed 3 days postoperatively revealed retinal reattachment in addition to splitting of the outer plexiform layer in a saw-like hyporeflective pattern (Fig. 1A).

OCT angiography at that level, revealed a pattern of partially formed concentric circles centred at the foveola ("macula fingerprint", Fig. 1B). A similar pattern was observed in a 50-year-old female patient with retinal splitting and bilateral disc oedema. In this case, findings were compatible with Vogt-Koyanagi-Harada chorioretinopathy (Fig. 1C and D).

2. Discussion

There are several patterns seen in en-face OCT and OCT-angiography in various diseases. For example, a sunflower-like structure has been described in en-face OCT and OCT-angiography images of x-linked juvenile retinoschisis[1] while a symmetric petaloid oedematous pattern has been seen surrounding macula holes indicating cystoid oedema at the edges of the hole.[2]

This pattern could be attributed to temporary postoperative hypotony, increased function of the RPE ion pumps or could be correlated to retinal vessel layout pattern. Moreover, this pattern could be regarded as an indication of a pathway for extracellular fluid absorption through the RPE to the lymphatic system. Since both patients share a history of intraocular inflammation, there may be the connection of a previous inflammatory episode to the characteristic pattern presented here. Inflammation, present or past, can result in Müller cell ion pump dysfunction and localized intracellular oedema at the Henle fibre layer just below the outer plexiform layer diffusion barrier.

3. Conclusions

The etiology of this specific pattern as well as its potential utilization as a diagnostic/prognostic marker is debatable.

CRediT author statement

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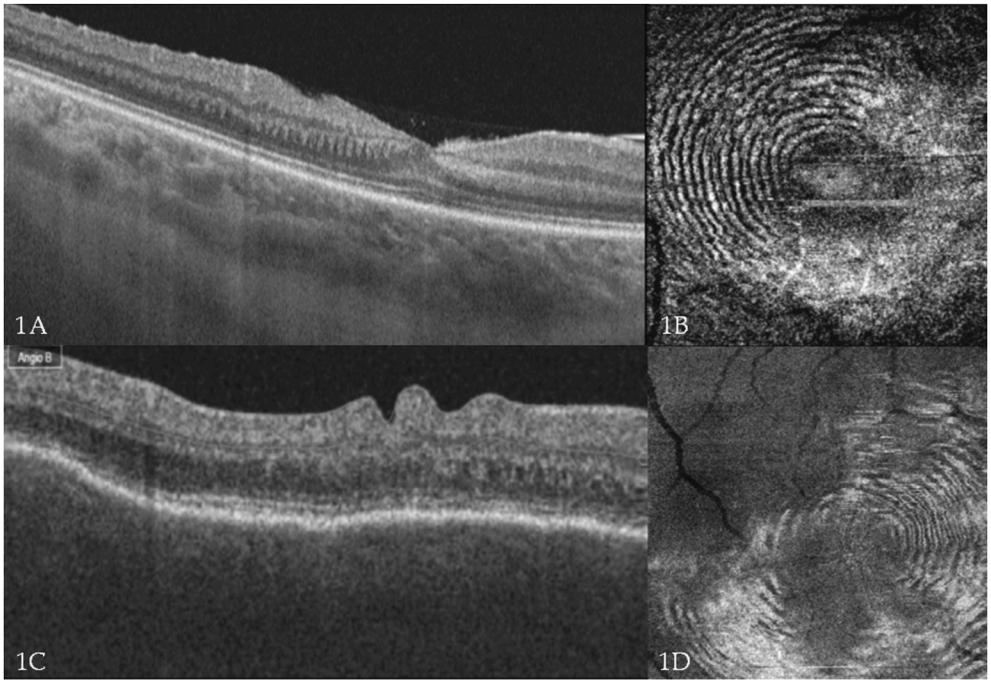

Fig. 1. A. Splitting of the outer plexiform retinal layer in a saw-like hyporeflective pattern in a 27-year-old patient following pars plana vitrectomy for rhegmatogenous retinal detachment. Figure 1B. A pattern of partially formed concentric circles centred at the foveola in a patient treated for rhegmatogenous retinal detachment. Figure 1c. Splitting of the outer plexiform retinal layer in a 50-year-old patient with Vogt-Koyanagi-Harada chorioretinopathy. Figure 1d. A pattern of partially formed concentric circles centred at the foveola in the context of Vogt-Koyanagi-Harada syndrome.

Patient consent

Consent to publish this case report has been obtained from the patient in writing.

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Authorship

All authors attest that they meet the current ICMJE criteria for Authorship.

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